a politically easy but unfruitful path, while failing to come to grips (at least until recently) with the (often politically) difficult issues whose successful resolution would promote greater *genuinely efficiency-enhancing competition.*

The philosophy that has heretofore underpinned regulatory efforts to "promote competition" is fundamentally flawed. It has, in essence, sought to promote the *illusion* of competition rather than the reality, and it has largely failed even on its own terms. The problem is much more the errors the government has committed (which have adversely affected "facilities-based" competition for local, long-distance and broadband services), than any errors of omission (failing to place even more onerous and intrusive requirements on the incumbent providers).

Competition's ability to persevere, *notwithstanding* the government's failure to take the hard steps that need to be taken, suggests just what a robust force it should properly be reckoned to be. Imagine how competitive the market might be today had the government been more balanced in its implementation of the 1996 statute. Actually one need not even imagine since, as we presently remark, there are regimes where superior results have been produced. We offer this paper, then, in the hope that the Commission will use the occasion of this Triennial Review to reassess not only its UNE regime *per se*, but also its overall local competition policy.

2. FACILITIES-BASED COMPETITION WILL LEAD TO SUSTAINABLE AND SELF-POLICING COMPETITION

In contrast to other regulatory jurisdictions, notably the United Kingdom (U.K.), where "facilities-based" competition has been the main policy objective, to date the primary focus of regulatory policy to promote local telecommunications competition in the United States has been on facilitating resale and repackaging of the incumbent local exchange telephone companies' ("ILECs'") services and facilities.[1] In this section, we describe how this focus significantly proscribes the relevant "domain of competition"—with competitive activities limited to marketing efforts and provision of various value-added services. In the limiting case of pure

[1] We use the term "facilities-based competition," to refer to situations where competitors deploy their own networks (wireline and wireless) rather than rely (substantially, if not completely) on the networks of incumbents. We note that the current regulatory regime provides incentives for new entrants to deploy only those facilities sufficient to take advantage of various arbitrage opportunities presented by current arrangements (*e.g.*, a CLEC deploying a "redundant" switch to serve an ISP and, thereby, reap the rewards of reciprocal compensation). We are aware that, in distinguishing "pure resale," the FCC has determined that a carrier's use of unbundled network elements qualifies as that carrier's "own facilities" for purposes of eligibility to receive USF support. *Federal-State Joint Board on Universal Service*, Report and Order, CC Docket No. 96-45, 12 FCC Rcd 8778, 8862. In this paper, when we employ the term "facilities-based" or "network" competition, we are distinguishing that from *either* the UNE-based *or* resale competition that relies largely on repackaging and reselling the incumbent's facilities and services. We often refer to the latter as "service" (as opposed to "network") competition.

resale, service- as opposed to facilities-based competition results in competitive rivalry manifest solely in terms of marketing-based initiatives.

There is, of course, nothing *per se* objectionable about competition on the basis of marketing differences; it is when considered in contrast to facilities-based competition that service-based competition suffers by comparison. Two important differences are worth remarking:

1) Facilities-based competition provides the basis for eventual deregulation and the substitution of a largely self-policing industry structure as the means for achieving and maintaining economically efficient pricing and allocation of resources in the industry. The viability of resale and repackaging as the basis for competition, in contrast, rests to a large and continuing (indeed, potentially expanding) extent, on regulatory intervention. Facilities-based competition is a *substitute* for regulation, whereas regulation is a necessary *complement* to service-based competition.

2) While it is sometimes maintained that facilities- and service-based competition are complements to one another (service-based competition supplementing and offering a "temporizing" alternative to competing network facilities deployment), promotion of service competition fundamentally *conflicts* with promotion of facilities-based competition. In particular, the easy terms and conditions of access to incumbent facilities and services that enable service-based competition are precisely the competitive "marks" that facilities-based competitors have to beat to survive and prosper. Use of (allegedly) theoretically "ideal" cost benchmarks (*viz.*, total element long-run incremental cost or "TELRIC") that understate incumbents' actual costs (that supply the real target competitors should—and usually would—have to beat) have the economic effect of excluding/deterring facilities-based competition.

The U.K. competitive regime supplies an interesting contrast and comparison to the U.S. regime: The U.K. has put greater emphasis upon promotion of facilities-based competition as a potential substitute for imperfect government regulation. As a result, the U.K. authorities have taken considerable pains to avoid undermining investment in competitive facilities deployment. For example, they have thus limited resale discounts and unbundling requirements, and have set controls for interconnection charges with a view toward effects on competition.[2] The results—

[2] Ironically, the U.K. authorities have more recently felt compelled by external pressure (in part, the consequence of U.S. proselytizing) to require greater unbundling than they previously judged was consistent with pursuit of their competitive objectives. The U.K. has never required switch or transport unbundling, and only recently adopted loop unbundling. A further irony: this unbundling effort has produced the same "incomplete success" in the U.K. as it has produced in the U.S. where service-based competition has not amounted to much, at the same time that its pursuit has undermined facilities-based efforts. Of the roughly 35 million subscriber lines in the U.K., there are only 170 fully unbundled lines and an even smaller number of unbundled high-frequency lines. *See Industry New Archives, Struggle for Competitive Broadband Access in Europe,* December 12, 2001 and Oftel, *Local Loop Unbundling Fact Sheet—February 2002,* February 2002.

especially when viewed against progress to date in the U.S.—are striking. Over 50 percent of U.K. households have a choice of wireline networks. At the end of 2001, BT accounted for 81.3 percent of all residential lines with NTL and Telewest accounting for the rest. These lines produced *36 percent* (*i.e.*, double the percentage of total lines) of residential calls actually connected. If one were to look at total market share, the figures are even more impressive. The total volume of domestic calls is almost evenly split between BT and its competitors. Competitors to BT handled nearly *63 percent* of international calls.[3]

2.1. RELIANCE ON UNEs AND RESALE LIMITS THE DOMAIN OF COMPETITION

The essence of competition is rivalrous behavior to induce customers to choose the productive inputs of one supplier over another. When a consumer chooses one brand of automobile over another, that implies the substitution of one maker's design and manufacturing capabilities and the raw materials it has acquired for another maker's supply capabilities and its raw materials.

The notion of "competition" that somehow does not entail the *substitution* of one set of productive capabilities for another is inherently problematical and strikes as almost a contradiction in terms. Certainly the products of different firms may occasionally share identical inputs (*e.g.*, two different makes of automobile may each carry the same brand of tires as original equipment).[4] To the extent that substitution of one for the other does not significantly alter resource allocation (*viz.*, the same number of, say, Michelin tires are consumed in either case), the common *identical* inputs *themselves* supply no basis for discrimination in choosing (*i.e.*, competition) between the two.[5]

Similarly, suppose two telecom competitors offer comparable bundles of services embodying some inputs or retail services acquired from an ILEC, such as is generally the case with the UNE platform. Substitution of one competitor's offering for the other's will not alter the identity of the embodied inputs or retail services being resold.

In the U.S., the latter type of situation is often cited as an example of "local telecom competition." This strikes us as a misnomer to the extent that *there is no difference* in the actual inputs or services embodied in the packages being offered. Stated alternatively (and starkly), if two bundles consisted solely of a literally identical set of LEC-supplied inputs or resale services *with no other value added*, it is hard to fathom in what sense they can be said to compete with

[3] Oftel, *Market Information: Fixed Update,* March 2002.

[4] Even in this case, inputs will not usually be *literally* the same inputs as in the case of ILEC and CLEC competition entailing use of literally the same facilities.

[5] This assumes prices are the same. If one supplier is for some reason able to acquire tires more economically, that might supply a basis for competitive discrimination. The choice criterion in this case involves comparative provisioning skills (resulting in a better price) rather than differences in tires which we assume, for purposes of argument, are absent. Arbitrary differences in regulatory treatment that account for price differences would hardly seem to constitute a legitimate, if nevertheless real, basis for competitive discrimination.

one another.[6] They are *literally* the same product alternative. To the extent there is additional value added, it is that value added which constitutes the ground for competition and customer choice.[7]

Unbundling is sometimes justified as an attempt to move the boundaries of the potential domain of competition in telecommunications. In particular, loop unbundling is alleged to allow for a greater scope of competition. On this view, loop unbundling will open the local switching "market" to competition (on the theory that the loop is a natural monopoly and, therefore, that corporate vertical integration of loop and switch forecloses competition in the supply of potentially competitive switching).[8]

There are (at least) two serious difficulties with this view:

1) Addition of more local switches does not necessarily result in any functional substitution—it may merely add functionally redundant switching occurrences; that is, the need to switch the same call twice that used to be switched only once. The flawed intercarrier compensation regime further encourages uneconomic entry that increases costs of call completion.[9]

2) Relatedly, note that if the incumbent's facilities were *not* available on an unbundled basis but the local market were open to competition, the chances for

[6] In terms of market definition, if two products are perfect substitutes for one another, they are the *same* product. In the case of telecommunications, *literally the same* unbundled network elements are bundled into particular offerings. Those offerings may differ in a variety of choice-relevant dimensions (*e.g.*, marketing or customer service) but not in terms of the underlying facilities or services. It is not a matter of one supplier's facilities substituting for another's—which is what might actually constitute a dimension of true "local competition."

[7] U.S. policy calls for ILECs to make retail offerings available to competitors for resale at a discount reflecting resource savings of making a wholesale compared to a retail offering. In this case, the "domain of competition" consists of marketing acumen as the actual (local) services being offered differ only in that respect (*i.e.*, marketing). Such discounts have been set at exceedingly generous levels relative to actual cost savings (especially when account is taken of the *added* costs of serving wholesale customers). This fact notwithstanding, IXCs (notably AT&T) have claimed they cannot compete effectively using such discounted retail offerings. While such statements are intended to evoke larger discounts, they actually connote competitive ineffectiveness relative to the ILEC, especially given the exaggerated discounts being offered.

[8] Interestingly, not so long ago the view of some was that the loop rather than the local switch was potentially competitive. Presently we note that lack of size economies in switches does not necessarily imply that there are no diseconomies associated with multiplication of local switches.

[9] In general, the greater the scope of a CLEC's genuinely productive call completion activities (*i.e.*, activities that *substitute* for ILEC activities), the greater the potential scope for efficiency enhancement. *See* Haring and Rohlfs, "Telecommunications Pricing and Competition," *Interconnection and the Internet: Selected Papers from the 1996 Telecommunications Policy Research Conference* (Lawrence Erlbaum Associates, Inc.: 1997), pp. 33-47. In this paper, we argue that compensation arrangements for reciprocal interconnection should recover the cost of switching a call, but *not* provide artificial incentives to *add* costs as would occur in the case of redundant local switching. Here the issue is not compensation for reciprocal interconnection but availability and pricing of unbundled loops.

> economically efficient competition would be enhanced. Of course, it would be unreasonable not to permit new entrants to interconnect with the incumbent's network. Nevertheless, had TA96 relied on "equal access" rather than unbundling wherever it is "technically feasible," we might have seen more efficiency-enhancing (not to mention more genuinely self-policing) local competition.

It is sometimes suggested that unbundling is a useful policy for enabling a *facilities-based* local competitor to fill out holes in its service and is, in this sense, a complement to facilities-based competition. Thus if a customer has multiple locations within a given area but a competitor cannot serve them all with its own facilities, the argument is that unbundled elements permits the competitor to serve all of those locations. As a corollary it is also argued that because there are marketing economies associated with having a larger advertising footprint, failure to unbundle means that the efforts of would-be competitors may be thwarted by inability to realize cost efficiencies of broader scale entry.[10] The problem with this argument is, as we elaborate presently, unbundled elements are a *substitute* as well as a complement for facilities-based competition. Making the complement cheap makes competitive supply of the substitute more difficult. At the same time, the availability of retail offerings for resale (at a substantial discount in the U.S.) would appear to provide an alternative means of realizing marketing advantages of "full-service" offerings without incurring the disabilities of unbundling in terms of productive inefficiency.

2.2. DESTROYING COMPETITION TO SAVE IT

The U.S. has long had a policy of what amounts to unbundling as a means for affording low-priced long-distance access to large customers—namely, special access/private lines. In this respect, the FCC's new unbundling policy, undertaken under TA96, can be simply viewed as an extension, albeit often an extreme version, of that policy.[11] The motivation for this policy has

[10] Indeed, in the U.S. the RBOCs offer this argument in making a case for removal of regulatory constraints on their ability to offer long-distance service.

[11] The policy of low-priced unbundled elements can easily be interpreted as a *tactic* to subvert the current unbalanced rate structure. Since that is its obvious ultimate effect, one can reasonably infer that a driving force behind the FCC's approach to unbundling is the prospective means it affords for undermining access charges that are set to recover part of the costs of local loops and various other cost burdens. The federal government lacks the power and/or political will to alter the unbalanced retail pricing structure directly, so it proselytizes for an input supply regime that renders the regulated structure of output prices non-viable. To the extent "competition" of this sort were driven by regulatory handicapping—forcing the incumbents' but not the entrants' access charges to bear the burden of universal service support and low charges for local services—it might perhaps be more aptly characterized as "cartelization," in economic terms. The regime is "cartelistic" to the extent that it determines competitive outcomes by restricting the ILECs' ability to alter their output prices. Entrants characterize this regulatory maintenance of inefficient pricing, which affords profitable opportunities for entry and price arbitrage, as "entry assistance" and ILEC attempts to restructure their charges as "anti-competitive exclusion."

seemingly little to do with local competition; indeed, if rates for unbundled elements are too low, it may be antithetical to *facilities-based* local competition.[12]

The existing unbundling policy takes for granted, without any seeming basis (*cf.* the U.K.), that the scope for facilities-based competition is limited. It focuses instead on regulating terms of access with a goal of subverting the structure of rates simultaneously mandated by contradictory retail pricing regimes. Indeed, AT&T and MCI/Worldcom measure the failure of this "competitive" regime *precisely* in terms of the extent to which long-distance access charges have not fallen to the level of incremental cost.[13]

In our view, the economic measure of the success of a competitive regime might better be cast in terms of its ability to substitute competition for regulation in guiding resource allocation and preventing abuse of market power. Comparison with the U.K. regime is illuminating. Unlike the U.S., where competitive reform serves primarily in effect as a means to subvert the unbalanced rate structure, the overriding objective of competition policy in the U.K. is to determine whether competition in telecommunications can be sufficiently vigorous to supplant or significantly reduce the need for government regulation to prevent abuse of market power and produce an efficient allocation of resources. *Deregulation is itself an important objective of government policy in the U.K.* To this end, Oftel has established a variety of policies designed to promote competition and resolve the issues that arise in the context of operations within a "network of networks," notably including a set of basic rules to govern terms and conditions of competitive interconnection.

---

[12] In this regard, it is interesting to remark Time Warner Telecom's opposition to *higher* X-factors which would have lowered the prices against which its largely facilities-based offerings must compete. *See,* for example, *Joint Comments of the Association for Local Telecommunications Services and Time Warner Telecom,* In the Matter of Access Charge Reform, Price Cap Performance Review for Local Exchange Carriers, Low-Volume Long Distance Users, Federal-State Joint Broad On Universal Service, CC Docket No. 96-262, CC Docket No. 94-1, CC Docket No. 99-249, CC Docket No. 96-45 (April 3, 2000), pp. 11-12. Some facilities-based CLECs, such as Allegiance, Time Warner Telecom and Choice One, have also opposed the creation of certain UNE combinations [Kim Sunderland, "Divide and Conquer," www.xchangemag.com (posted June 1, 2001)].

[13] Others are less adept at cloaking their own interests. The CLECs and their advocates do not define success in terms of price performance, but rather in terms of their own acquisition of market share. The *Competition Policy Institute*, for example, claims to support "the concept of periodically *revisiting access rates* to determine whether competition was pushing prices down," and concludes that market forces have not been sufficient to bring charges down because court rulings are retarding entry based on unbundled network elements. It does not appear, however, that the CPI has actually undertaken any effort to determine the extent to which *access rates* themselves have fallen, which, of course, they have, quite substantially, under existing price cap arrangements. Far from "revisiting access rates," the CPI's focus is exclusively on the viability of the UNE regime and the market shares of would-be competitors. The extent to which cartelistic thinking pervades these comments can be gauged from the extent of the focus on competitors' market shares as the exclusive measure of relevant price declines as against the behavior of prices *per se*. *See, Comments of the Competition Policy Institute in Response to Public Notice FCC 98-256* (October 26, 1998), In the Matter of Access Charges Reform, Price Cap Performance Review for Local Exchange Carriers, Emergency Petition for Prescription of MCI Telecommunications Corporation, Petition for Rulemaking of the Consumer Federation of America, International Communications Association and National Retail Federation, CC Docket No. 96-262, CC Docket No. 94-1, CC Docket No. 97-250, and RM-9210.

A fundamental premise of Oftel's view has always been that *facilities-based* competition is a key predicate for deregulation. Without facilities-based competition, there is no obvious natural path that leads to true deregulation.[14] Oftel's focus on the primacy of facilities-based competition has led it to question the merits of requirements for unbundled elements.[15] Oftel's view is that against any putative benefits must be balanced any harms from unbundling in terms of undermining of incentives for deployment of competing facilities, not to mention facilities already deployed/investments already sunk, in the event unbundled rates are set *too low*. Unbundled elements are a *substitute* as well as a complement for facilities-based competition. Making the complement cheap makes competitive supply of the substitute more difficult (*cf.* Time Warner Telecom's previously cited *Comments* in the access reform proceeding).

2.3. IN SEARCH OF A MORE BALANCED AND ECONOMICALLY REASONABLE APPROACH TO UNBUNDLING

In setting standards for economically reasonable unbundling of network elements, there are important economic tradeoffs involved that entail a valuation and balancing of conflicting objectives. The fact that one firm does *not* voluntarily do something that would make a rival's life easier by no means implies that the firm's behavior is unreasonable or that economic welfare has been harmed. To the contrary, governmental or legal compulsion of some types of behavior may well undermine economic incentives and market competition and, in consequence, reduce economic welfare. Alternatively, aggregate economic welfare may be unaffected by the regulated firm's behavior, either because there are economically viable alternative courses of action available to would-be competitors or because outcomes, but for the regulated firm's conduct, would be essentially *unaltered* given other relevant considerations.

For illustration, consider the operation of the patent system: A patent affords an inventor a legal monopoly of specified duration. The existence of a patent limits competition by raising a legal barrier to entry. It would clearly be possible to lower such a barrier by permitting competitors to duplicate a patented product or requiring the patent holder to license use of a patent at a zero

[14] In this regard, we note former Common Carrier Bureau Chief Gerald Brock's observations that unbundling requirements "represent a substantial increase in regulatory oversight over what are expected to become competitive markets," that the FCC's policies "require detailed knowledge and intervention to settle disputes and could lead to a substantial expansion of regulatory oversight" and "diminish the progress made over the last decade in adopting incentive regulation and return to a focus on company specific cost data." He also remarks the absence of any clear path toward deregulation under the Commission's approach. *See* "Local Competition Policy Maneuvers," *Interconnection and the Internet: Selected Papers from the 1996 Telecommunications Policy Research Conference*, G.L. Rosston and D. Waterman, eds. (Lawrence Erlbaum Associates: 1997), pp. 1-14.

[15] The "benefits" of unbundling in terms of subverting the regulatory rate structure are incapable of accruing to the same extent in the U.K. because there has been greater progress toward rebalancing and you can't fix what ain't broke. Under the U.K.'s unified regulatory regime, BT was afforded a modicum of pricing flexibility to rebalance local and long-distance rates, and fully exploited that flexibility over an extended period, with the result of substantial rebalancing. This progress towards a more rational retail rate structure may help account for the fact that, as we noted previously, of the 35 *million* subscriber lines in the U.K., there are only *170* fully unbundled loops. *See* Oftel, "Local Loop Unbundling Fact Sheet—February 2002."

price. Lowering such a legal entry barrier would, however, dissipate the value of the patent and thus *raise* economic entry barriers to the creation of new products (*viz.*, by limiting the ability to appropriate rewards from inventive activities). In setting patent terms, governments thus balance these different types of conflicting considerations in an effort to maximize economic welfare. The claim that competition *in* patented products is limited by patents offers no valid basis for abridging patent rights in the absence of an evaluation of the effect of permitting patent violations on the development of patented products. Any welfare losses from limitation of one kind of competition must be weighed against the welfare losses from limitation of the other kind of competition to produce a judicious evaluation.

The patent example is an important one because the unbundling debate often focuses, *inter alia*, on access to new technological capabilities. If a competitor is compelled to share (prematurely or unremuneratively) the fruits of its efforts to advance technology and produce better products and service capabilities, its ability to appropriate economic rewards from such efforts and, hence, its economic incentives to undertake such efforts will be attenuated with adverse consequences for the vigor of competition and the dynamism of the competitive process.

In evaluating specific unbundling requests, it is necessary to consider the social costs and benefits and the administrative costs of the network elements sought. In this regard, it is useful to consider the analogy to requirements under the so-called essential facilities doctrine in antitrust law enforcement.[16]

The essential facilities doctrine has been characterized by one of the world's leading antitrust scholars (the late Harvard Professor Phillip Areeda) as "an epithet in need of limiting principles."[17] In essence, the doctrine loosely specifies some exceptions to the general right to keep one's creations to oneself. Originally the exceptions were exceedingly limited to the public interest in the need for the maximum flow of information and opinion to preserve our democracy and our Constitution.[18] As Professor Areeda notes,[19] we have subsequently moved a long way

[16] We recognize that the FCC has found that the essential facilities doctrine is "of limited assistance" in the analysis of the unbundling requirements of TA96 [*UNE Remand Order* (FCC 99-238) at ¶60]. Thus, we offer this discussion for the sake of illuminating the hazards of taking the unbundling requirement too far (as we believe the FCC has), not to suggest that the Commission adopt it as a formal standard for evaluating the availability of UNEs precisely because, as we discuss presently, the doctrine is subject to the same misapplication as the FCC's UNE policy. What we should all be able to agree on is that where multiple platforms/networks have been widely deployed and where the ILEC is not even the "dominant" provider of services (*e.g.*, in the provision of broadband networks and advanced services), the ILEC's facilities should not be deemed "essential" or subject to unbundling. *See* J. Haring and H. M. Shooshan, *ILEC Non-Dominance in the Provision of Retail Broadband Services,* before the Federal Communications Commission, *In the Matter of Review of Regulatory Requirements for Incumbent LEC Broadband Telecommunications Services.* CC Docket No. 01-337. Attachment A to *Comments of Qwest Communications International, Inc.* (March 1, 2002).

[17] *See* Phillip Areeda, "Essential Facilities: An Epithet In Need Of Limiting Principles," *Antitrust Law Journal* (Vol. 58, 1990), pp. 841-853 (suggests principles to limit application of essential facilities concept).

[18] *Ibid.*, p. 843 [discussing *Associated Press v. United States*, 326 U.S. 1, 23-25 (1945)].

[19] *Ibid.*, pp. 843-844, footnotes omitted.

from Justice Frankfurter's narrow concept of the extraordinary circumstances in which intervention is essential:

> Imagine the torment Justice Frankfurter would feel to see his free-press public utility concept invoked in support of a rock impresario seeking admission to the local auditorium; a teletype machine marketer complaining that its competitor will not sell machines for it, a ski resort complaining that a rival resort will not engage in joint marketing with it, a maker of muscle building food supplements demanding that a body building magazine accept its ads, a paper retailer complaining that other paper retailers will not admit it to their wholesale buying co-op, an anesthesiologist insisting that the local hospital, using in-house anesthesiologists, allow him to perform anesthesiological services as well; or the would-be oil seller, who has no storage tanks of his own, demanding to use those of an incumbent seller to say nothing of Berkey, who wants to know the results of Kodak's research before Kodak markets its own innovations.

Legal scholars have pointed to disincentive effects as the principal "downside" from loose definition of what constitute essential facilities. William E. Kovacic notes:[20]

> Perhaps the greatest danger in recognizing an essential facility doctrine is that judges will freely attach the label of 'essential facility' to any asset that confers a competitive advantage upon its owner and will compel access. Among other harmful consequences, indiscriminately forcing access to broadly defined categories of essential facilities can seriously reduce incentives to create, maintain and improve such assets.

William B. Tye states that:[21]

> Competitors *should not be encouraged* to become 'free riders' on the efforts of others by appeals to the antitrust law.

William Blumenthal advises that:[22]

> In light of the potentially perverse competitive incentives created by the opportunity for compulsory access, a plaintiff should not be granted access in an

[20] *See* "Essential Economics and Essential Facilities: The Federal Courts and the Development of Antitrust Principles Governing Transmission Access in the Electric Utility Industry," Advanced Workshop in Regulation and Public Utility Economics (Monterey, California, July 5-7, 1989).

[21] *See* "Competitive Access: A Comparative Industry Approach to the Essential Facilities Doctrine," *Energy Law Journal* (Vol. 8:337, 1987).

[22] *See* "Three Vexing Issues Under The Essential Facilities Doctrine: ATM Networks As Illustration," *Antitrust Law Journal* (Vol. 58, 1990).

> essential facilities case unless alternatives to the facility are extraordinarily difficult for anyone to put into place.

In the traditional public utilities, references to essential facilities are frequent, but occur in the context of a history in which government itself has often created or maintained monopoly bottlenecks.[23] In the modern era, *governmental* barriers have often been removed (as is generally true in the case of telecommunications in most jurisdictions) and with their removal so has a principal rationale for compelled access. Indeed, in some venues excessive sharing of assets is viewed as counterproductive in terms of fostering competition.

Differences in essential facility policy between the United States and United Kingdom are illustrative in this regard. In the U.S., federal government policy has attempted to promote competition by requiring ILECs to afford long-distance competitors so-called equal access to their facilities and to unbundle elements of their networks and offer such unbundled elements (at cost) to competitors. In the U.K., in marked contrast, the government has, in the most part, viewed equal access requirements and unbundling as antithetical to promotion of competition. On the view that were use of the incumbent's facilities made too easy, incentives to undertake provision of facilities-based competitive network supply would be counterproductively attenuated (and the government's competitive and deregulatory policy objectives thereby undermined), BT has not been required to offer its would-be competitors equal access or, until recently, any unbundled network elements.[24] U.K. policy does require resale and network interconnection utilizing certain technical interfaces, but additional intervention heretofore has been quite limited *lest the competitive process itself be undermined.*

2.4. A FLAWED COST STANDARD: FROM BAD TO WORSE

Results in the U.S. have been conditioned not only by extensive unbundling but also by the cost standard employed to price various network elements. While the problems associated with TELRIC can most appropriately be addressed by changes to or clarifications of the TELRIC regime itself, the Commission should also be conscious of the effects of TELRIC in analyzing which elements should be subject to unbundling requirements. For example, if the incumbent thinks it might have to unbundle new advanced facilities at or below cost, it will have greatly reduced incentive to take the risk associated with that investment. Excessive unbundling and uneconomic pricing rules dampen investment incentives on the part of *both* incumbents *and* new entrants. With this in mind, we offer some brief observations on the economic impacts of TELRIC.

---

[23] Economist Bruce Owen, a chief architect of the Bell System divestiture, remarks that "[e]ssential facilities, problematic and perhaps nonexistent outside the regulated sector, are common in the regulated industries, *where public policy creates **absolute** entry barriers.*" *See* "Determining Optimal Access to Regulated Essential Facilities," *Antitrust Law Journal* (Vol. 58, 1990), p. 887 (emphasis added).

[24] As we noted previously, Oftel has, under external pressure from both the U.S. and from the EU, recently acquiesced to loop unbundling.

TELRIC is the specific *modus operandi* the FCC has adopted to implement its interpretation of TA96's requirement that unbundled elements be made available to competitors at "cost."[25] TELRIC has been attacked on a variety of grounds. The ILECs claim it is confiscatory because, while a mark-up for forward-looking common costs is contemplated, there is no allowance for recovery of universal service and embedded costs. Others, notably Alfred Kahn, have argued that it is biased against facilities-based competition because a prospective entrant must beat a conceptually idealized mark rather than the incumbent's actual (forward looking) costs. Moreover, demand decisions are inefficiently skewed since they are based on idealized conceptions of what society gives up rather than what society actually must forego given the actual resources that are being used to deliver particular services/elements.

Even in a competitive environment, price cannot be expected to fall to the "average total cost" ("ATC") of the latest and greatest technology. If firms anticipate a continuous flow of cost-reducing technical advances over time, as telecommunications companies surely must, they would not instantly adopt new technology as soon as the ATC of the latest equipment falls below market price. That is a recipe for disappointment since costs of new equipment would never be recovered as new technology constantly subverts the ability to do so. As William Fellner pointed out almost fifty years ago,[26] rational investors will systematically delay introducing new processes until the return on the cost savings is sufficiently great so that they can earn the anticipated depreciation and a compensatory return over the life of the new plant. Fellner calls this "anticipatory retardation." So price remains *greater* than ATC to enable old plant to be written off and an adequate return to be earned on undepreciated plant.[27]

One inconsistency in TELRIC is thus that it presumes deployment of the latest greatest technology but requires it to be priced at a level that would seem to preclude its economic deployment. In this regard, note that the FCC's proposed mark-ups over TELRIC were only for recovery of forward-looking common costs.[28] Stated alternatively, firms would actually incur the large sunk costs of a radically new network only if they could charge rates that permit them to depreciate such costs rapidly and earn sufficiently high rates of return.

---

[25] One critique of TELRIC is that it represents a marked departure from standard practice and that, because there are many uncertainties associated with its computation, there are difficulties and costs associated with its implementation that ill serve statutory intent.

[26] *See* "The Influence of Market Structure on Technological Progress," in American Economic Association, *Readings in Industrial Organization and Public Policy* (Homewood: Richard D. Irwin, 1958), pp. 287-291.

[27] In this regard, we note that in the initial versions of the Hatfield model of TELRIC, while the latest greatest technology was assumed, very low depreciation rates and allowed returns of the sorts regulators have typically allowed were simultaneously assumed.

[28] In fairness, the FCC concedes a need to at least address the issue of whether the ILECs are to be permitted an opportunity to recover their sunk costs, although it has failed as yet to address that need in terms of the LEC services it regulates. Some states have undertaken to grasp this nettle and that accounts in part for their having set charges at levels greater than proposed by the FCC.

Another conceptual difficulty with TELRIC involves the appropriate scope of the analysis contemplated. The "long run" in economics is the period over which *all* factors of production may be varied. The creators of TELRIC initially had fairly radical notions of just what "all" factors might mean but these were subsequently scaled back. The problem is the absence of any clear demarcating lines for purpose of undertaking such an analysis in the first place. As Kahn has suggested, in the long run the labor force can be reeducated and rehoused in more conveniently served housing configurations. If the sky is the limit, there is, in principle, no limit on the flights of imagination that could potentially inform TELRIC models.

These engineering models are really the height of hubris, purporting to supply regulators with a means to resolve questions that the competitive process—whose effective setting in motion is the putative purpose of the exercise in the first place—is supposed to be answering.

Thus, while we understand the TELRIC standard is not directly at issue in the Triennial Review, it is clearly implicated in any critique of policy implementation to date and any review of UNEs must be undertaken in light of the disincentives inherent in the way TELRIC is being applied today.

2.5. SYNOPSIS

Facilities-based competition entails increased investment in infrastructure, innovation, and real choices for consumers. It is also is a necessary predicate for deregulation. To the extent that competition is principally based on resale or repackaging, benefits will be limited and the government will continue to have a major—indeed, likely expanding—role in regulating terms and conditions of access to ILEC offerings.

As the U.K. experience illustrates (by way of contrast), there are important trade-offs in fostering service competition at the expense of facilities-based competition. The extreme unbundling policy the U.S. authorities have adopted has depressed a more rapid development of facilities-based local competition. It (mistakenly) takes for granted that the scope for such competition is circumscribed and, as we have noted, focuses instead on regulating terms of access to promote more efficient pricing by affording means to subvert the structure of rates *simultaneously* mandated by regulation. Indeed, to achieve this objective, U.S. *federal* policy has taken a course that undercuts facilities-based competition and all but guarantees a continuing need for detailed and expanding regulatory intervention.

3. THE CURRENT REGULATORY PROCESS HAS UNDERCUT THE MORE RAPID GROWTH OF FACILITIES-BASED COMPETITION

In our view, the major problems that have arisen in implementing TA96 stem from the fact that the Commission has made the "new world" far more complex than it needed to be. As an example, in the context of this proceeding, the Commission has expanded the number of UNEs and consistently looked for ways to cut the price to make it increasingly more attractive (in the most superficial manner) for competitors to ride the incumbent's network, rather than to build their own. The FCC has interpreted Congress's mandate that incumbents provide interconnection "at any technically feasible point" to require incumbents to provide *any* piece-part of their network (including sub-loops) to *any* competitor in a manner and at a price that meets each competitor's needs.[29]

Moreover, UNEs must be priced according to a cost standard that is, to be kind, fanciful. As we noted previously, the costs produced by using the FCC's TELRIC cost model purported to be reflective of an efficient firm, but, in reality, no firm could survive based on an across-the-board application of TELRIC. Moreover, the fictional network that underlay this cost model is not at all like the network that the ILECs operate and maintain today—or are likely to at any time in the future.

It strikes us that when there is a seemingly infinitely elastic supply of regulatory process, competitors will always turn to regulators for salvation, even in an environment where there is a

[29] The Commission has expanded the unbundling requirements and extended unbundling deeper into the network with little or no balancing of the costs imposed on the ILECs to provision these elements or the risks to the operation of the underlying telephone network. As our colleague Joe Weber [*The Fragmentation of America's Telecommunications System* (Strategic Policy Research, 2002)] has pointed out in discussing the potential technical problems associated with subloop unbundling:

> Because of the idiosyncratic nature of these remote points—they are all very different—local problems of many kinds can, and surely will, occur, ranging from incorrect connections to noisy connections to inoperative connections, with all the customer inconvenience and added cost involved in locating, setting responsibility, and fixing the problem. Furthermore, it is not at all clear that the purported advantages of subloop unbundling outweigh the drawbacks. Surely competitors can provide service about as well in almost all cases if they lease the entire loop as they can if they lease parts of it, particularly at the prices dictated by the FCC's costing methodology.
>
> In short, while it may be appropriate to take the operational risks associated with loop unbundling in order to obtain the advantages of increased competition subloop unbundling imposes higher risks for lower rewards—clearly a bad bargain.

Weber goes on to note that ability to contain such harms will diminish as the total number of unbundled loops increases relative to the total universe of telephone subscribers.

glut of capacity (*e.g.*, interoffice transport[30]), where competitive inputs are readily available (*e.g.*, switching[31]), and where they may have flawed business plans to begin with. The risk for regulators of the inability to say "enough is enough" is that competitors will always seek more—and more will never be enough. An even greater danger arises when the regulators perceive "a stake" in the success of certain competitors. Once that line is crossed, it is easy for competitors to "threaten" to fail if more favors are not bestowed on them, thereby making regulators look bad.[32] We believe that the Commission's agenda has been overly focused on producing near-term results to validate its approach, rather than on creating a comprehensive set of conditions to promote investment in efficient productive capacity, to encourage the development of innovative new technology and provide a truly diverse set of services to customers.

Once the regulator decides to "create competition" (as opposed to creating the conditions necessary for competition), success or failure is often seen as just a matter of adjusting the dials (*e.g.*, lowering the price, ordering yet more intrusive unbundling). Yet, the marketplace is much more demanding master, where success or failure turns on far more than the ability to extract ever more favorable terms from regulators. As one recent analysis of the bursting of the "telecom bubble" explained:

> "Ultimately, it became clear that increased demand for telecom services from consumers or corporate customers was not going to build. So the revenue pool wound up fairly static—yet it had to be shared by many, many more hopefuls."

Put another way, it was a case of a receding tide beaching all boats.

---

[30] The number of CLEC fiber networks in the 150 largest MSAs—which encompass nearly 70 percent of the U.S. population—has grown from approximately 1,100 to approximately 1,800 in the last three years. As of year-end 2001, one or more CLECs had obtained fiber-based collocation in wire centers that contain more than half of all business lines served by the RBOCs. *See UNE Fact Report 2002* (April 2002) (Submitted by BellSouth, SBC, Qwest, and Verizon) (hereinafter *UNE Fact Report*), p. I-3.

[31] At the time of the FCC's last UNE review, CLECs had deployed approximately 700 local circuit (or "voice") switches. Today, CLECs operate approximately 1,300 *known* local voice switches. At the time of the last UNE review, CLECs were serving about six million lines using switches they had deployed. As of year-end 2001, CLECs were serving between *16 and 23 million* local lines—including at least three million *residential* lines—over their own switches. CLEC switches are now so geographically widespread that they are being used to serve local customers in wire centers that contain approximately *86 percent* of the Bell companies' access lines (*96 percent* in the top-100 Metropolitan Statistical Areas). Since the last triennial review, the installed base of CLECs' *known* data switches has nearly doubled, growing from 860 in 1998 to more than 1,700 today (*UNE Fact Report*, pp. II-1, 2).

[32] *See* John Haring, "The FCC, The OCCs and The Exploitation of Affection," FCC OPP Working Paper Series No. 17 (June 1985).

> A firm does not have to possess a large market share to exercise economic power. . . [New entrants] can certainly exercise power by threatening to make government officials who have inflicted huge costs on consumers to promote competition look bad. They can do this by threatening to fail. A small market share and low profits can be assets in the extortion campaign. They make the threat of failure more compelling and thus make it more likely that government officials will yield to extortionate demands. As is always the case with extortionists, giving in merely encourages additional blackmail attempts.

A good case in point is that of the so-called DLECs, many of which are either operating in bankruptcy (*e.g.*, Covad) or have sold out to AT&T (*e.g.*, Northpoint) or WorldCom (*e.g.*, Rhythms). Despite being the beneficiaries of line-sharing (which at least on an interim basis in some jurisdictions was priced at zero[33]), the DLECs have achieved only a small share of the broadband market. In our view, this is largely because they failed to differentiate their product from each other's and from the ILECs' (whose loops they were using). Others have observed that DLECs failed to put the necessary customer service systems in place and expanded their operations too quickly, sacrificing service quality for coverage.[34] Burdened with mountains of debt (much of it from equipment vendors who had been lending money to stimulate sales of their own products) and faced with ISPs and end user customers who could no longer pay their bills when the economy soured, the DLECs have not surprisingly crashed. One analyst fingered another culprit, stating that "cable modem killed the DLECs." Even with the most favorable regulatory treatment, these local competitors have struggled due to factors beyond regulators' control.

Moreover, a serious moral hazard problem with the U.S. unbundling regime has been exposed by the conduct of the IXCs. AT&T and WorldCom have been able to delay RBOC entry into long distance by seeking to expand the number of hoops through which the Bells must jump before receiving regulatory and antitrust approval. Much of the mischief has been done in the context of the protracted arguments over the provisioning of UNEs, but also in seeking certain combinations of UNEs that serve the IXCs competitive self-interest. We have in mind here demands that Bell Companies agree to provide the "UNE-Platform" or "UNE-P" (which, for a long distance carrier, can be used as a cheap substitute for switched access[35]) or EELs (a combination of loops and transport) that can substitute for special access. We believe that AT&T has been especially shameless in pointing to its own choosing not to compete as "proof"

[33] For example, the Minnesota Public Utility Commission set the DSL or "line sharing" UNE rate at zero. *In the Matter of a Commission Initiated Investigation into US WEST Communications Inc.'s Costs Related to the Provision of Line Sharing Services* Docket No. P-5692, 5710, 5827, 5638, 5670, 466, 421/CI-99-1665 Order for Setting Prices for Unbundled Network Elements (July 24, 2001), p 13.

[34] Keith Markley, "Burned or Buttered? Making the Case for Independent DSL Providers," www.xchangemag.com (posted June 1, 2001).

[35] We discuss additional effects of UNE-Ps in a subsequent section of this paper. *See* Section 5.1.

that local markets are not "effectively" open and that the RBOCs should continued to be barred from competing fully in the long distance market.[36]

Our point is simple—and we believe all too obvious. For the past six years since TA96 was enacted, the government has been about striving mightily to create competitors. It has done so by affording new entrants virtually every regulatory advantage they have sought, and has justified it as necessary to "jumpstart" competition and protect competitors during the "transition" to fully competitive (and presumably unregulated) markets. This begs the questions "do we really have a coherent vision of where we want to go and what it will really take to get there?"

Part of the problem is that regulators are seeking to eat their cake and have it too—that is, they have sought to do the "easy" things first (*e.g.*, make it cheap for competitors to enter using pieces of the incumbent's networks on extremely favorable terms that also allow them to undermine the inefficient retail pricing structure) and defer the "unpleasantness" of dealing with that retail pricing structure head-on. The irony is that this pricing structure—that regulators are striving to retain for as long as they can (to avoid the political consequences)—has had a much greater effect on the nature and extent of competition than the availability of low-priced UNEs,[37] as we discuss presently.

4. DESPITE FLAWED POLICY, LOCAL COMPETITION HAS BEEN GROWING

In the motion picture *Jerry McGuire*, the sports agent played by Tom Cruise reduces his objectives to a simple statement: "Show me the money!" Local competitors spawned by TA96 and the FCC's favorable pricing rules have followed the same logic: competitors have gone where there is money to be made—either those areas where demand is the "densest" or where they could take advantage of the arbitrage opportunities created by inefficient pricing.

[36] We note several studies, including one by the FCC, that suggests that competition is actually more robust—in both local and long-distance markets—once the line of business restrictions have been removed. The FCC estimated that lines served by CLECs in Texas increased by more than 60 percent since SBC was permitted to offer interLATA services in Texas [FCC Press Release, "Federal Communications Commission Releases Latest Data on Local Telephone Competition" (May 21, 2001)]. Moreover, there are substantial benefits of RBOC entry for users of long-distance services. Consumers in New York experienced an additional 9 percent savings in long-distance after Verizon obtained 271 relief, relative to Pennsylvania (where Verizon had not yet gained 271 relief) from 1999 to 2000. Texas consumers saved an even greater 23 percent, relative to California consumers over that same period [Jerry A. Hausman, Gregory K. Leonard and J. Gregory Sidak, *The Consumer-Welfare Benefits from Bell Company Entry into Long-Distance Telecommunications: Empirical Evidence from New York and Texas* (January 9, 2002)].

[37] The FCC's UNE regime has had a much greater adverse effect on the incentives of the incumbents (and competitors!) to invest and deploy new technology and services than a positive effect on "jump-starting" competition.

The results are significant. Penetration of the local exchange market by competitors has increased steadily. In June 2001—in the midst of the recession, the FCC found that the number of lines provided by CLECs had increased during the previous six months.[38]

Despite the continuing growth of local competition, much has been made of the financial difficulties encountered by many CLECs over the past 18 months. While the contraction by this sector was inevitable given how "over-heated" it was (in part due to the very policies we are criticizing) and in view of the condition of the economy in general during this period, we note that many bankrupt firms (*e.g.*, Teligent) are continuing to operate, and have even emerged from bankruptcy while growing (*e.g.*, Covad). The primary effect of bankruptcy on those firms will be to enable them to emerge without the huge debt burdens that plagued them in the past, even if they are initially smaller scale enterprises.

For those competitors that have discontinued operations, in most cases, their assets have been purchased by other firms. For example, after Northpoint declared bankruptcy in early 2001, Northpoint and AT&T quickly reached an agreement by which AT&T would purchase substantially all of Northpoint's network assets.[39] Similarly, at the end of 2001, Worldcom purchased much of Rhythms' facilities[40] and IDT acquired "substantially all" of Winstar's assets.[41] The piecemeal sale of assets, such as Teligent's, serves to strengthen the many carriers that purchase assets to fit their business plans.[42]

Looking at the growth of CLECs alone, we see that competition has been expanding. But even more significantly—and with important implications for a future when regulatory policy send the right signals—we have seen the development of intermodal competition; that is, competition

---

[38] FCC, Industry Analysis Division, "Local Telephone Competition: Status as of June 30, 2001" (February 2002) at Table7 ("June 2001 Competition Report"). While the FCC data show an increase in the number of switched access lines served by CLECs, these figures are conservative because only companies that serve 10,000 or more switched access lines in any one state are required to file these data. SPR's own analysis of 3Q-01 financial releases of over 40 major telecommunications companies including the ILECs, IXCs, CLECs and cable operators that provide telecommunications services showed that competitors provided over 9.5 percent of local access lines. SPR's analysis included fixed wireline connections that provided voice and/or data services to residential and business customers in the U.S.

[39] "Northpoint Lays Off 700 Employees," from www.clec.com (March 30, 2001). Although AT&T refused to continue service to Northpoint's customers, a number of other DSL providers stepped in to fill the void. These companies included Network Access Solutions, INYC, Broadriver Communications, OnSite Access (certificated in Indiana), and Yipes Communications. *See* "INYC and NAS Offer to Connect Northpoint Customers" (April 5, 2001); BroadRiver Appeals to Northpoint Customers" (April 5, 2001); and "Three More Firms Offer Help to Former Northpoint Customers" (April 9, 2001), all from www.clec.com.

[40] "Worldcom Closes Acquisition of Rhythms Assets" from www.clec.com (December 6, 2001).

[41] Susan Rush, "IDT Snags Winstar Assets," *Broadband Week*, from www.broadbandweek.com (December 20, 2001).

[42] Rachel King, "Teligent Recruits Help with CO Sell," www.theneteconomy.com (posted January 24, 2002); Bruce Christian, "Easton Gains Its Independence," www.phoneplusmag.com (posed January 21, 2002).

from other platforms, notably cable, wireless and increasingly satellite and the Internet. And unlike many of the CLECs whose *raison d'être* is to take advantage of the various regulatory anomalies, facilities-based competitors have pursued a more logical expansion—and extension—of their core businesses.

Cable. Cable companies have been upgrading their existing networks to offer a wide array of services, including broadband Internet access (where they have the dominant position in the market), digital video and cable telephony. As of July 2001, an estimated 1.3 million telephone customers were receiving telephone service from cable companies.[43] Cox Communications, many of whose systems are in Qwest's telephone service territory, was serving nearly 500,000 telephone customers by year-end 2001 and reported adding 55,000 in the fourth quarter alone.[44] This would rank Cox around the 12th largest telephone company in the U.S.[45] Cox reported that data and telephony revenues for the twelve months ended December 31, 2001 increased by close to $500 million over the year 2000, "primarily due to customer growth."[46] Cable companies are expanding the reach of their business telephony services. According to the NCTA, five large cable companies (or their affiliates), including Cox and Time Warner, were providing business telephony service in over 100 markets as of July 2001.[47]

Another entry strategy for cable companies into voice telephony is through the use of Voice over Internet Protocol ("VoIP"). This technology permits cable companies to avoid the expense of installing circuit-switches. A number of VoIP tests are currently underway.

In addition, consumers with cable modem service no longer have a need for a second telephone line.

---

[43] "Cable Telephony: Offering Consumers Competitive Choice," National Cable and Telecommunications Association (July 2001), p. 1 ("NCTA Report").

[44] Cox Communications Announces Fourth Quarter Financial Results for 2001, Cox Communications Press Release (February 12, 2002) ("Cox Press Release").

[45] "NCTA Report," p. 2.

[46] "Cox Press Release."

[47] "NCTA Report," p. 8. Adelphia Business Systems recently completed construction of a fully-redundant, 18,000 mile long-haul fiber network in the eastern U.S. to support its offerings of local and long-distance voice, high-speed data and broadband Internet access services to business customers in over 75 markets across the U.S. *Ibid.*

Wireless. Mobile wireless networks are already carrying calls that a few years ago would have been carried over wireline networks.[48] Further, for some customers, mobile phones already have replaced wireline phones (*e.g.*, for second lines). Leap Wireless, which operates extensively in Qwest's service territory, reports that about 7 percent of its customers no longer use wireline connections and 61 percent use their cell phone as their primary phone.[49] Leap describes its "Cricket" service as "Comfortable Wireless" that "lets customers make all their *local* calls within their local service area and receive calls from anywhere for one low, flat rate..." and "an affordable wireless alternative to traditional landline service..."[50]

Satellite. Satellite communications networks are now emerging as major alternatives to ILEC networks.[51] Satellite networks are used extensively today to transmit data for multi-location business. Their use in voice communications and for providing services to residential customers (*e.g.*, broadband Internet access) is increasing. The two principal vendors of direct broadcast video services, DirecTV and Echostar, are already offering high-speed Internet access via their satellites. In some cases, the terrestrial network is used for the low-speed upstream channel, but in others, VSAT architectures are used to allow the satellites to be used in both directions. Satellite networks may be especially important for providing high-quality, affordable service in rural areas where terrestrial alternatives (*e.g.*, cable modem and DSL) are unavailable or too expensive.

The Internet. In our discussion of cable, we noted the emergence of VoIP. There are, of course, other services available on the Internet that are in fact substitutes for communications that previously used or currently use the telephone network. In each case discussed below, the Internet as a platform can be seen as competing with not only various telephone-network based services, but with the telephone network itself.

Many telephone calls can be, and are being, supplanted by email messages. If there is no need for a complex interaction, an email is often more convenient. It is always faster, it can be sent at any time of day, time is not wasted with extraneous conversation, and, of course, it is much

---

[48] SPR conducted surveys of business customers in New Jersey and (residence customers) in Illinois that found that a significant portion of customers were making calls on their wireless phones that they might otherwise have made over their wireline phone at home or at the office. *See* Harry M. Shooshan, Testimony on behalf of Bell Atlantic-New Jersey before the Board of Public Utilities ("BPU") in New Jersey, BPU Docket No. TO99120934 (May 17, 2000); Panel Testimony of Harry M. Shooshan, William E. Taylor, and Joseph H. Weber on behalf of Verizon New Jersey before the BPU, BPU Docket No. To020095 (February 15, 2001); and Harry M. Shooshan, Testimony on behalf of Ameritech Illinois before the Illinois Commerce Commission, Docket No. 98-0860 (Ameritech Illinois Ex. 5.0, March 12, 1999).

[49] Yuki Noguchi, "More Cell-Phone Users Cut Ties to Traditional Service," *The Washington Post* (December 28, 2001) from www.washtech.com.

[50] http://www.leapwireless.com/services/content/services_cricket_2.html (March 26, 2002) (emphasis added).

[51] Of the competitors that have successfully emerged from bankruptcy, Orbcomm and Iridium are satellite-based voice and data services.

cheaper. Everyone is familiar with situations where they, or people they know, use email in lieu of telephone calls in selected circumstances. This is a trend that is bound to accelerate as more computer literate people reach adulthood, and as the number of people with access to computers increases.

Many voice telephone calls end up as delivery vehicles for voicemail messages. Clearly, email is a viable substitute for many of these messages. It is often more convenient, almost always more economical (this represents a genuine economy, since electronic messages can be transmitted and stored far more efficiently than voice messages) and has the advantage of multiple addressees and a written record. Voicemail service has grown rapidly with the virtual ubiquity of answering systems, both centralized and local, and it can certainly be expected that the growth in the volume of voicemail traffic will be slowed, if not reversed, by the increasing availability of email.

In recent years, a vast telephone-based business of telemarketing has evolved. Although it is not clear whether the sales function of telemarketing will be impacted by the Internet, it is certainly clear that the shopping and ordering functions can be and are being shifted to the Internet. The use of on-line vendors instead of catalogs leads to electronic orders rather than phone orders. The familiar "800" call to reach a bank of telemarketing people taking orders is being supplanted by accessing web sites. Even catalogs now usually have websites that can be used to place an order instead of using the telephone. It is more economical to accept orders in this manner, since order taking people are not needed. It is also often more convenient for the customer, who does not need to wait in a queue or wend his or her way through a long sequence of telephone prompts.

The voice-grade modems currently in wide use for accessing the Internet were originally developed and deployed for the purposes of transferring data among business locations. As the Internet has evolved, much of this traffic has been offloaded to the Internet. It is less expensive to use the Internet, since there is no need for long distance telephone calls or private voice-grade lines. A single high-speed line to an Internet provider can often meet all the data communications needs of a business. The rapid growth of long distance data communications services has been largely supplanted by Internet usage.

Facsimile service, once one of the fastest growing telecommunications services in the world, is in many cases falling victim to email. Email is generally faster, cheaper and of higher quality than facsimile. The principal areas where email has been unable to supplant fax is the transmission of documents that do not exist in electronic form, or when sending information to people who don't have computers. This, too, is changing with the growth of the computer population and the advent of inexpensive scanners with OCR capability. It seems almost certain that, in years to come, facsimile will shrink substantially as computers and scanners, and consequently email, become more ubiquitous.

Although difficult to measure, some groups—notably teen-agers, are thought to often spend hours on the telephone each day. Such usage can clearly be supplanted in part by electronic "chat rooms" that are so ubiquitously available on the Internet. Instead of spending hours on the

phone with one or two people, he or she can now, in the same period of time, talk to many additional people. Some might consider this a blessing, but it does represent a potential reduction in telephone usage.

COMPETITORS' FOOTPRINT©. While the number of competitors in operation and the number of access lines served are useful indicators, they fail to tell the whole competitive story. It is for this reason that SPR designed a tool we call the COMPETITORS' FOOTPRINT©. The COMPETITORS' FOOTPRINT© shows the "share of wallet" of the total telecommunications retail expenditures generated by telecommunications users and received by competitors operating in a particular ILEC's service territory.[52]

The COMPETITORS' FOOTPRINT© demonstrates that competitors are present, that they have established connections to/relationships with customers, and that they are actively competing for customers' usage. Increasingly, this competition comes in the form of packages or bundled offerings that allow customers "any-distance" calling. Competitors for local telecommunications services are rarely just CLECs selling network access lines. In light of this reality, it is misleading, therefore, to define the market simply in terms of "local telephone service," as certain parties tend to urge regulators to do.

Among the states for which we have calculated the COMPETITORS' FOOTPRINT© is Pennsylvania.[53] SPR estimated that, in 1997, competitors obtained 61 percent of all business retail telecommunications revenues generated by customers in Verizon Pennsylvania's service

[52] Our measure of COMPETITORS' FOOTPRINT© is the ratio of competitors' estimated revenues from wireline and fixed and mobile wireless services provided to customers in ILEC service areas to the total estimated revenue received by the ILEC and these competitors in those service areas. To arrive at competitors' total revenue, we add the competitors' revenue from local resale; local and intraLATA services through facilities and UNEs; interLATA intrastate toll; interLATA interstate toll; mobile wireless providers' local, intrastate toll and interstate toll; and revenue derived from private microwave and fixed wireless facilities located within the state. We divide that total by the sum of ILEC's revenue and the competitors' total revenues. The COMPETITORS' FOOTPRINT© is conservative in that it does not capture wireline usage that does not cross the ILEC's network nor services such as cable telephony or cable modem service for which revenues are not publicly reported and are difficult to estimate. The methodology used in making these calculations has been filed in a number of state proceedings and is available from SPR.

[53] SPR has also filed the COMPETITORS'FOOTPRINT© in the following regulatory proceedings: Testimony on behalf of Bell Atlantic-New Jersey before the Board of Public Utilities in New Jersey, BPU Docket No. TO99120934 (Direct, May 17, 2000; Rebuttal, September 8, 2000); Testimony on behalf of Ameritech Illinois Before the Illinois Commerce Commission, Docket No. 98-0860 (Direct, Ameritech Illinois Ex. 5.0, March 12, 1999; and Responsive Testimony on behalf of Ameritech Indiana Before the Indiana Utility Regulatory Commission, *In the Matter of: Petition of Comptel, Ascent, AT&T Communications of Indiana, GP, TCG Indianapolis, and McLeodUSA Telecommunications Services, Incorporated for an Investigation into the Structural Separation of Indiana Bell Telephone Company, d/b/a Ameritech Indiana*, Cause No. 41998 (January 24, 2002).

area. By 2001, competitors "share of wallet" had increased to 73 percent.[54] This reflects an average growth rate of 5 percent per year.

SPR recently completed a similar analysis for Qwest in Idaho. Our COMPETITORS' FOOTPRINT© analysis shows that competitors account for 75 percent of total retail telecommunications revenues (combined business and residence) in Qwest's telephone service territory in Idaho.

5. THERE ARE THREE KEYS TO A NEW MORE BALANCED LOCAL COMPETITION POLICY

Whatever its conceptual or operational relevance to TELRIC, it is impossible to write on a "blank slate" when it comes to implementing pro-competitive reforms in telecommunications policy, let alone the specific terms of TA96. The principal failures of the reform efforts undertaken heretofore are basically three:

1) Regulation has stacked the deck against local competition by failing to come effectively to grips with the reality of an unbalanced rate structure and, relatedly, with the necessity for rationalization of universal service and other politically mandated subsidy support under competitive market organization;

2) Regulation has failed to reflect the import of this failure to rebalance rates and rationalize subsidy support in the intercarrier compensation scheme it has promulgated, with the adverse consequence of instigating a massive economically non-productive rent-seeking effort involving substantial resource waste and misallocation, not to mention probable mal-distribution of income from the less to the more well off;

3) Regulation—and particularly as we have discussed at length in this paper, unbundling—has allowed the process to be gamed in a manner not only inconsistent with promotion of effective local competition, but also with maximum consumer benefit.

In this section, we offer some thoughts to illuminate a feasible and sensible way forward—one which addresses these policy failures and offers the best chance of creating a truly effective

[54] An earlier estimate was originally filed by Harry M. Shooshan in Direct Testimony on behalf of Bell Atlantic—Pennsylvania, Inc., in CC Docket No. P-00971307, *For a Determination that Provision of Business Telecommunications Services Is a Competitive Service Under Chapter 30 of the Public Utility Code* (February 12, 1998). SPR updated its calculations in the fall of 2001.

competitive process. The best way of discovering whether competition works is to try it. As Economic Nobelist Friedrich Hayek has observed:[55]

> [C]ompetition is valuable only because, and so far as its results are unpredictable and on the whole different from those which anyone has, or could have, deliberately aimed at...The market leaves the particular combination of goods, and its distribution among individuals, largely to unforeseeable circumstances—and, in this sense to accident. It is, as Adam Smith already understood, as if we had agreed to play a game, partly of skill and partly of chance. This competitive game, at the price of leaving the share of each individual in some measure to accident, ensures that the real equivalent of whatever his share turns out to be, is as large as we know how to make it.

Given current regulatory rules, it would be difficult to maintain that, in its current manifestation, "the competitive game" ensures that real equivalents are as large as we know how to make them. Instead, it would mainly appear to reflect what happens when pursuit of competitive advantage takes the form of rent-seeking from the government rather productive enterprise in the marketplace.

We address the three problems enumerated above in reverse order.

5.1. UNBUNDLING

One can conceive of both "positive" and "normative" theories of unbundling, with the former examining the broader strategic implications and motivations to account for progressively expanding unbundling requirements and the latter focusing, more narrowly, on the immediate costs and benefits of progressively greater unbundling requirements under different assumptions about the input and output charging regimes to identify the economically optimal degree of unbundling.

Any positive theoretical account of progressively expanding unbundling requirements surely must have reference to the long-distance entry trigger embodied in TA96 and to the strategically-motivated incentives thereby created for an expansive interpretation of unbundling requirements—an interpretation whose value was further buttressed by the FCC's selection and implementation of the TELRIC standard for judging the reasonability of charges for unbundled elements. If there are further savings in relevant charges the more extensive the sought-for extent of unbundling, and such requests not only produce cost savings but also translate into delayed RBOC long-distance relief, from a CLEC's perspective, there can almost never be too much of the good thing called "unbundling"—notwithstanding the costs associated therewith if the cost-causer is not the cost-bearer.

---

[55] *See* "Competition as a Discovery Procedure," in *New Studies* (1978), p 180.

By the same token, the optimal degree of unbundling is very much a matter of such costs and their relationship to incremental benefit. If expected costs are reckoned to be substantial and productive/competitive benefits minimal, specific instances of unbundling may make little economic sense, strategic considerations aside.

Full loop unbundling is the most straightforward of the outside plant unbundling options, and arguably the only one that is really needed in order for service-based offerings to be made. In contrast, it is not at all clear that the purported advantages of subloop or high-frequency line unbundling outweigh the drawbacks. In these cases there are a variety of operational disabilities,[56] but little seeming benefit, especially given the prices for loops dictated by the FCC's preferred costing methodology.

As previously noted, legal commentators have stressed that access to allegedly essential facilities should only be granted if alternatives are "extraordinarily difficult" to put into place.[57] In the examples just discussed, it is the "extreme" forms of unbundled elements whose provision entails "extraordinary difficulties" and does not especially enhance competition. In both the case of subloops and high-frequency line unbundling, the same competitive "bang" can be produced at substantially less cost and potential network disruption through the use of unbundled loops.

When proper account is taken of the ready availability of other network service elements on an unbundled basis, the list of UNEs could again be significantly reduced. In cases where competitive sources of component supply elements (*e.g.*, switching) exist or where alternative sources of market supply exist (*e.g.*, transport), whether from competitors or from tariffed offerings of incumbents, the balance of relevant considerations swings against government-compelled unbundling. The reason is that "forcing access to essential facilities seriously reduces incentives to create, maintain and improve such assets,"[58] and when alternatives are readily available (*i.e.*, not "extraordinarily difficult" to acquire) or entail costs that exceed potential benefits, these adverse consequences in terms of investment *disincentives* are not worth bearing.[59]

If the government is really serious about promoting facilities-based competition, it needs to take care not to dissipate investment incentives for facilities deployment. All firms confront "make-or-buy" decisions. If as a result of government policy the buy decision systematically "trumps" the make decision, firms will wish to do a lot of buying and not much making. But "making" is

[56] For a full discussion, *see* Joseph Weber, *The Fragmentation of America's Telecommunications System* (Strategic Policy Research, 2000).

[57] And only then, if such access is necessary for economic welfare-enhancing competition.

[58] *See* Kovacic, *op. cit.*

[59] It is precisely in terms of sensitivity to these investment incentive issues where the main difference between U.K. and U.S. regulation principally resides.

what makes for facilities-based competition, and that is the competition that renders regulation less necessary.

Note, finally, that the current regime is not likely to succeed even on its own terms, *i.e.*, in terms of promoting *service-based* competition. That is because "the deal" the government seeks to create through extreme unbundling and low-ball element pricing is available to all comers. It would be one thing to try to create competition as the U.K. initially did by designation and cultivation of a single entity (*viz.*, Mercury) to carry the competitive banner against BT; this is the tack the U.S. has sometimes pursued in, for example, weapons acquisition to promote competitive alternatives. The U.K. quickly discovered that the chosen entity was not necessarily the most vigorous competitor (indeed, having attained "chosen" status, its competitive incentives may well have been dulled) and quickly and freely then licensed additional competitors (who received no special, "favored" treatment), leaving it to the competitive process to discriminate between the more or less efficient.

Since the U.S. regime is open to all, it is incapable of preventing the effective dissipation of any rents the government's regulatory scheme might otherwise promise. The result is that the market is "spoiled" by excessive entry, premised on the illusionary promise of being able to sell cheap but buy even cheaper. We will know the government is serious about genuinely promoting competition when it stops trying to use incentive-dissipating regulation to produce competition.

5.2. INTERCONNECTION

The most fundamental competitive reform is network interconnection. As we have seen, while it might well make sense to allow competitors to *refuse* interconnection requests in some initial "state of nature," when the objective is to maximize incentives for competitors to deploy facilities and build out their networks, introduction of competition at a "later" date when incumbent networks already exist and operate ubiquitously requires interconnection. Without interconnection, the appeal of new networks may be restricted and their prospects for success limited.[60]

[60] Nevertheless, it is worth noting that when rates were at their most "unbalanced," both public and private enterprises in the U.S. found it economically worthwhile to deploy as much or more capacity as that embodied in the public switched network to address their internal communications requirements. They have now largely shed this capacity as toll rates have been "deloaded." *See* J. Haring and H. M. Shooshan, *Competition and Consumer Welfare in Long-Distance Telecommunications*. Prepared for AT&T for submission before the FCC in *Notice of Proposed Rulemaking, In the Matter of Competition in the Interstate Inter exchange Market*, CC Docket No. 90-132 (May 15, 1991), pp. 56-65.